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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,943	06/13/2005	Tetsuya Komoguchi	09792909-6283	6002
26263	7590	01/28/2008	EXAMINER	
SONNENSCHEIN NATH & ROSENTHAL LLP			TRAN, TAN N	
P.O. BOX 061080			ART UNIT	PAPER NUMBER
WACKER DRIVE STATION, SEARS TOWER			2826	
CHICAGO, IL 60606-1080				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

R14

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/538,943	KOMOGUCHI ET AL.
	Examiner	Art Unit
	TAN N. TRAN	2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 12 November 2007.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-36 is/are pending in the application.  
 4a) Of the above claim(s) 2-18 and 27-36 is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1 and 19-23 is/are rejected.  
 7) Claim(s) 24-26 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 13 June 2005 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date 06/13/05; 12/21/07.

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_.

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election of Species I, claims 1,19-26 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

**Drawings**

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first material portion has an opening at the top; and a second material portion having a refractive index lower than that of the first material portion is disposed in the opening as recited in claim 24 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. Figure 27 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

#### **Claim Rejections - 35 USC § 102**

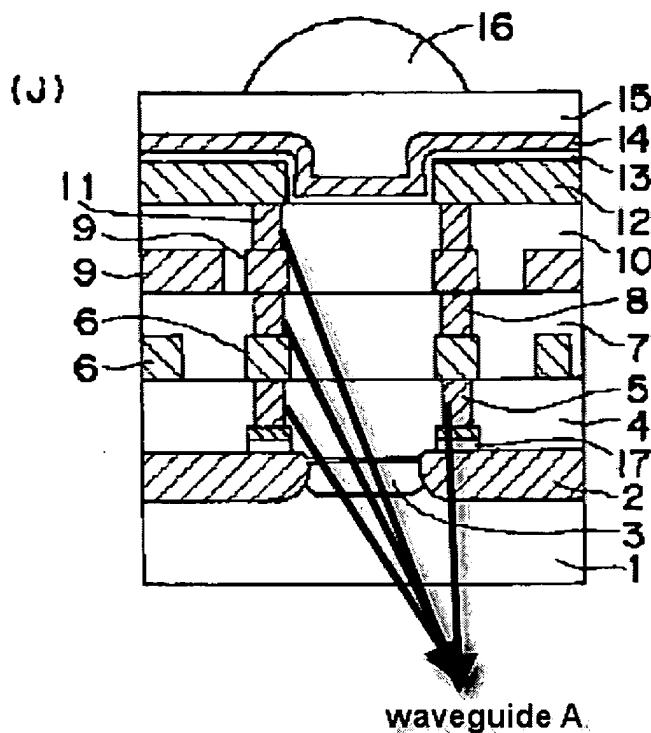
4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Kawasaki (JP-2001-267544).

With regard to claim 1, Kawasaki discloses a plurality of light-receiving sections 3 (it is inherent that Kawasaki disclose a plurality of light-receiving sections in order to provide array of solid-state image pickup device formed on the same substrate) and which generate charge in response to incident light (because sections 3 are the light-receiving sections); a insulating layer 4 functioning as a planarizing layer which covers predetermined elements 15 disposed on the substrate 1 to perform planarization [paragraph 0033, lines 10-13]; a plurality of signal lines (6,9) disposed above the planarizing layer (layer 4); a waveguide (A as shown in the attached fig.) which guides incident light to each of the light-receiving sections 3 (see fig. 1A, and attached fig.), the waveguide (A as shown in the attached fig.) passing through the space between the plurality of signal lines (6,9). (Note see attached fig. and figs. 1A, 9J of Kawasaki).



***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

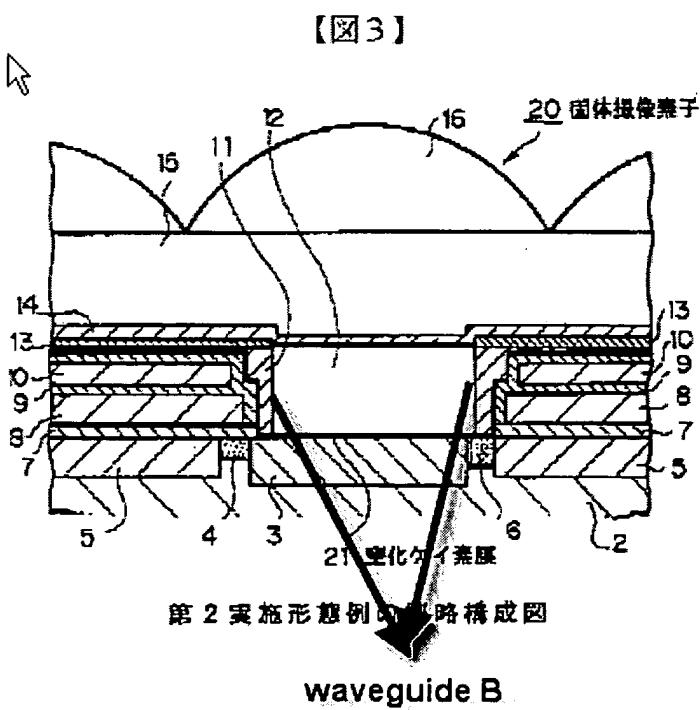
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawasaki (JP-2001-267544) in view of Fukusho (JP-10-326885).

With regard to claims 19,20, Kawasaki is silent that the waveguide comprises a light-transmissive film having a relatively high refractive index, the light-transmissive film being embedded in a hole formed by an insulating film having a relatively low refractive index, the

light-transmissive film includes a first material portion containing at least hydrogen wherein the first material portion comprise silicon nitride.

However, Fukusho discloses the waveguide (B as shown in the attached fig) comprises a light-transmissive film (transparent film 12) having a relatively high refractive index (lines 7-12 of Abstract in the translation), the light-transmissive film (transparent film 12) being embedded in a hole formed by an insulating film 11 having a relatively low refractive index (lines 7-12 of Abstract in the translation), the light-transmissive film (transparent film 12) includes a first material portion containing at least hydrogen wherein the first material portion comprise silicon nitride (lines 11,12, paragraph 0022, fig. 3 of Fukusho). (Note see attached fig. and fig. 3 of Fukusho).



Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include the waveguide comprises a light-transmissive film having a relatively high refractive index, the light-transmissive film being embedded in a hole formed by an insulating film having a relatively low refractive index, the light-transmissive film includes a first material portion containing at least hydrogen wherein the first material portion comprise silicon nitride in Kawasaki's device, as taught by Fukusho, motivated to carries out total reflection between insulating layer and transparent film.

Applicant's claim 19 does not distinguish over Kawasaki and Fukusho references regardless of the process used to form the first material portion of light-transmissive film because only the final product is relevant, not the process of making such as "the light receiving section contains hydrogen released from the first material portion by heat treatment in a hydrogen atmosphere".

Note that a "product by process" claim is directed to the product *per se*, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Wertheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); *In re Fitzgerald*, 205 USPQ 594, 596 (CCPA); *In re Marosi et al.*, 218 USPQ 289 (CAFC); and most recently, *In re Thorpe et al.*, 227 USPQ 964 (CAFC, 1985) all of which make it clear that it is the final product *per se* which must be determined in a "product by process" claim, and not the patentability of the process, and that, as here, an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that Applicant has burden of proof in such cases, as the above case law makes clear.

With regard to claims 21-23, Kawasaki is silent that an etching stopper film for forming the hole is provided on the upper surface of a gate-insulating film on the light-receiving section, the first material portion is in contact with the gate-insulating film through an opening of the etching stopper film; Wherein the etching stopper film comprise silicon nitride formed by low-pressure CVD and at least the etching stopper film extends to above transistor region provide in the substrate in the periphery of the light-receiving section.

However, Fukusho discloses an etching stopper film 21 for forming the hole is provided on the upper surface of a gate-insulating film 7 on the light-receiving section 3, the first material portion is in contact with the gate-insulating film 7 through an opening (where transparent material 12 forming in the etching stopper film 21) of the etching stopper film 21; Wherein the etching stopper film 21 comprise silicon nitride formed by low-pressure CVD (lines 6,7, paragraph 0023) and at least the etching stopper film 21 extends to above transistor region 5 provide in the substrate 2 in the periphery of the light-receiving section 3. (Note see attached fig. and fig. 3 of Fukusho).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include an etching stopper film for forming the hole is provided on the upper surface of a gate-insulating film on the light-receiving section, the first material portion is in contact with the gate-insulating film through an opening of the etching stopper film; Wherein the etching stopper film comprise silicon nitride formed by low-pressure CVD and at least the etching stopper film extends to above transistor region provide in the substrate in the periphery

of the light-receiving section in Kawasaki's device, as taught by Fukusho, motivated to carries out total reflection between insulating layer and transparent film.

***Allowable Subject Matter***

6. Claims 24-26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 24-26 are allowable over the prior art of record, because none of these references disclose or can be combined to yield the claimed invention such as the first material portion has an opening at the top; and a second material portion having a refractive index lower than that of the first material portion is disposed in the opening as recited in claim 24.

***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TAN N. TRAN whose telephone number is (571) 272-1923. The examiner can normally be reached on 8:30-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, PURVIS SUE can be reached on (571) 272-1236. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tan Tran (Au 2826)

Jan 2008

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